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Clinical Features and Imaging Modalities in the Diagnosis of Internal Jugular Vein Phlebectasia: A Case Report

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Abstract

Internal Jugular Vein (IJV) phlebectasia is a rare congenital venous anomaly, typically presenting as a soft, compressible swelling on the side of the neck, which transiently appears in periods of increased intrathoracic pressure, such as when performing a Valsalva maneuver[1,2]. Due to its uncommon nature and benign course, it is often misdiagnosed or subjected to unnecessary investigations. We report a case of right-sided internal jugular vein phlebectasia in a pediatric patient, highlighting the clinical features and imaging findings essential for accurate diagnosis and management. Doppler imaging confirms the diagnosis and is the gold standard.

Keywords: Venous anomaly, Valsalva maneuver, Jugular vein

Introduction

Internal jugular vein phlebectasia (IJVP) is a rare congenital vascular anomaly characterized by fusiform dilatation of the internal jugular vein without associated tortuosity. Clinically, it manifests as a soft, compressible, and non-pulsatile neck swelling that becomes evident during activities that increase intrathoracic pressure, such as coughing, straining, or the Valsalva maneuver, and disappears at rest. Among the cervical veins, the internal jugular vein is most commonly affected [6], followed by the external jugular, anterior jugular, and superficial communicating veins. A right-sided predominance has been consistently observed, though the exact aetiology remains unclear.

Jugular vein phlebectasia has been infrequently reported in the literature, with increasing recognition in recent years due to advances in imaging techniques and improved diagnostic awareness. Several terms, including venous aneurysm and venous cyst, have been used to describe this entity; however, phlebectasia is now the preferred terminology. The condition is benign and often asymptomatic, but its clinical presentation can mimic other neck pathologies.

The differential diagnosis of a neck swelling that enlarges with the Valsalva maneuver includes laryngocele, branchial cleft cyst, cystic hygroma, cavernous hemangioma, and mediastinal masses. Imaging plays a crucial role in diagnosis, with color Doppler ultrasonography considered the gold standard due to its ability to demonstrate venous dilatation and dynamic flow changes. Cross-sectional imaging with computed tomography or magnetic resonance imaging may further aid in anatomical delineation and the exclusion of alternative diagnoses.

This case report highlights the clinical features and imaging modalities essential for the accurate diagnosis of internal jugular vein phlebectasia.

Case report

A paediatric male patient was referred with a complaint of intermittent right-sided neck swelling, which his mother had observed over the past six months. No relevant premorbid history was present. Physical examination at rest revealed no abnormalities. However, upon performing the Valsalva maneuver, a soft, painless, and compressible swelling appeared in the lower right side of the neck. Doppler ultrasonography of the neck was performed to confirm the diagnosis and exclude other causes of neck swelling. Gray-scale imaging demonstrated fusiform dilatation of the right internal jugular vein. Color Doppler imaging showed venous flow within the ectatic segment without evidence of thrombosis or significant turbulence. The caliber of the vein increased during the Valsalva maneuver, confirming its dynamic nature. Based on the clinical and imaging findings, a diagnosis of right internal jugular vein phlebectasia was made. As the patient was asymptomatic and had no complications, conservative management with regular follow-up was advised. The patient remained stable during follow-up, with no progression of symptoms or complications.

Discussion

Internal jugular vein phlebectasia is a benign and uncommon vascular condition, most frequently identified in the paediatric population [1,2]. The classical presentation is a neck swelling that becomes apparent during activities that increase intrathoracic pressure, a feature clearly demonstrated in the present case. Consistent with published literature, the condition showed right-sided involvement.

The aetiology of IJVP remains uncertain. Proposed mechanisms include congenital weakness of the venous wall, absence or incompetence of venous valves, and increased transmission of intrathoracic pressure. The predominance on the right side has been attributed to anatomical factors, including the shorter and straighter course of the right internal jugular vein and its direct drainage into the superior vena cava.

Differential diagnoses of a neck swelling accentuated by Valsalva maneuver include laryngocele, branchial cleft cyst, cystic hygroma, cavernous hemangioma, and mediastinal masses. Imaging is essential to differentiate IJVP from these conditions. Color Doppler ultrasonography is the imaging modality of choice, as it provides real-time evaluation of venous dilatation, flow patterns, and dynamic changes during Valsalva maneuver[7,8,9]. In this case, Doppler imaging confirmed the diagnosis by demonstrating fusiform dilatation with normal venous flow and absence of turbulence or thrombosis.

Management of internal jugular vein phlebectasia is typically conservative, as the condition is benign and complications are rare. Surgical intervention is reserved for cosmetic concerns, progressive enlargement, or complications such as thrombosis. Awareness of this entity is crucial to prevent unnecessary invasive diagnostic or surgical procedures.

Conclusion

Internal jugular vein phlebectasia, though rare, should be considered in the differential diagnosis of a neck swelling that enlarges with Valsalva maneuver, especially in paediatric patients. Careful clinical examination combined with Doppler ultrasonography allows accurate diagnosis and avoids unnecessary

interventions. Conservative management with regular follow-up remains the mainstay of treatment in asymptomatic cases.

Table 1: Child at rest, no neck swelling

Table 2: Right neck mass upon Valsalva

Abbreviations

IJV Internal Jugular Vein

Patient consent: Guardian consent obtained

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